UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF NEW YORK

FISHER-PRICE, INC.,
MATTEL, INC.,

Plaintiffs,

v.

KIDS II, INC.,

Defendant.

REPORT and RECOMMENDATION[1]

10-CV-988A(F)

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[1] Claim construction questions upon referral are considered as dispositive requiring a report and recommendation pursuant to 28 U.S.C. § 636(b)(1)(B). *See Lamoureux v. AnazaoHealth Corp.*, 669 F.Supp.2d 227, 268 (D.Conn. 2009) (stating that absent consent pursuant to 28 U.S.C. § 636(c)(1), claim construction determinations by magistrate judge are dispositive requiring report and recommendation) pursuant to 28 U.S.C. § 636(b)(1)(B)).

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JURISDICTION

By order filed January 25, 2010, the Hon. Richard J. Arcara referred this case to the undersigned for all pretrial matters (Doc. No. 10). By order filed October 26, 2012, the District Judge referred the case to the undersigned for conduct of any claim construction or Markman hearing[2] and reiterated that related summary judgment and any remaining discovery matters remain referred to the undersigned (Doc. No. 109). The matter is before the undersigned on the parties' request for construction of certain claim terms of the patent in suit (Doc. Nos. 110 and 111).

BACKGROUND

Plaintiffs' Complaint, alleging patent infringement, was filed December 7, 2010. On November 21, 2012 (Doc. No. 112), at the parties' request, the court scheduled a Markman hearing for January 8, 2013. In accordance with the court's order establishing

[2] "The interpretation of the words or phrases in patent claims is called claim construction." Herbert F. Schwartz, Ronald J. Goldman, PATENT LAW AND PRACTICE, Seventh Ed., Bureau of National Affairs, Inc., 2011 at 144. In federal patent infringement cases, claim construction is a function to be performed by the judge. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979, 980-88 (Fed.Cir. 1995) (*en banc*), *aff'd*, 517 U.S. 370 (1996).

a claim construction briefing schedule, Plaintiffs filed on December 20, 2012, Fischer-Price, Inc. and Mattel, Inc.'s Opening *Markman* Brief On Claim Construction Issues (Doc. No. 113) ("Plaintiffs' Opening Brief") with the Declaration Of Yariv Waks In Support Of Fisher-Price, Inc. And Mattel Inc.'s Opening Markman Brief on Claim Construction Issues ("Waks Declaration") attaching Exhibits A-K, Doc. Nos. 113 -1 — 113-12 ("Waks Declaration Exh(s). __"). Also on December 20, 2012, Defendant filed Kids II's Opening Claim Construction Brief (Doc. No. 114) ("Defendant's Opening Brief"), and the Declaration Of Scott P. Amy In Support Of Kids II's Opening Claim Construction Brief (Doc. No. 114-2) ("Amy Declaration") attaching Exhibits 1-28 (Doc. Nos. 114-3 – 115-11) and Exh. 29 A-D (Doc. No. 115-12 – 115-15) ("Amy Declaration Exh(s). __").

On January 2, 2013, Plaintiffs filed Fisher-Price And Mattel's Responsive *Markman* Brief On Claim Construction Issues (Doc. No. 117) ("Plaintiffs' Responsive Brief") with Supplemental Declaration Of Yariv Waks In Support Of Fisher-Price Inc. And Mattel Inc.'s Responsive *Markman* Brief on Claim Construction Issues (Doc. No. 117-1) ("Waks Supplemental Declaration") attaching Exhibits L-N (Doc. Nos. 117-2-4) ("Waks Supplemental Declaration Exh(s). __"). Plaintiffs also attached copies of 25 decisions of the Court of Appeals for the Federal Circuit. Also, on January 2, 2013, Defendant filed Kids II Responsive Claim Construction Brief (Doc. No. 116) ("Defendant's Responsive Brief") together with copies of 30 decisions of the Court of Appeals for the Federal Circuit. The Markman Hearing and oral argument was

conducted on January 8, 2013 (Doc. No. 118);[3] at the close of the hearing the parties were invited to submit supplemental briefs.

In accordance with the court's invitation, on January 18, 2013, Plaintiffs filed Fisher-Price And Mattel, Inc.'s Supplemental Claim Construction Brief (Doc. No. 119) ("Plaintiffs' Supplemental Brief"). Also on January 18, 2013, Defendant filed Kids II's Supplemental Claim Construction Brief (Doc. No. 120) ("Defendant's Supplemental Brief"). Further oral argument was deemed unnecessary.

FACTS[4]

The patent in suit, U.S. Patent No. 5,562,548, was issued in 1996 to Daniel R. Pinch and Dennis M. Tuner, then employed by Cosco, the patentees' employer and a competitor of Plaintiffs, and was purchased by Plaintiffs in 2005 ("The '548 patent" or "the patent").[5] Waks Declaration Exh. A ("Exh. A"); Plaintiffs' Opening Brief at 1, 4 n. 3. The '548 patent was issued for a "convertible child swing," Exh. A, *i.e.*, a child swing that permits a child to swing in either a front to back or a side to side movement achieved by changing the position of the swing seat in which the child is placed. *Id.* The '548 patent asserts one independent claim (Claim 1), Exh. A, Col. 7 at 42-56, and 18 independent claims, of which Claim No. 1 and Claim No. 10 ("the Claims") are at issue. Plaintiffs' Opening Brief at 3; Defendant's Opening Brief at 4. According to Defendant, eight terms of the Claims require judicial construction, Defendant's Opening

[3] At the hearing the parties utilized Power-Point materials to assist in making their respective presentations to the court. The hard copies of the presentations, provided to the court as aids in the parties' respective presentations, were not filed.

[4] Taken from the pleadings and papers filed in this action.

[5] A copy of the '548 patent is attached as Appendix A.

Brief at 4; according to Plaintiffs, six terms require such construction. Plaintiffs' Opening Brief at i; 11-24. The format of the court's treatment of the terms at issue varies from the parties'.

In the preferred embodiment of the '548 patent, illustrated by Exh. A, Fig. 1, the swing's child seat is suspended from an overhead unit housing a mechanical spring source which provides power to swinging hanger arms attached to the swing frame, supported by four metal legs, to move the child seat to and fro along an arc. The child seat may be removed by a latching mechanism for alternative removal from the swing and use as a car seat. Exh. A Abstract, Figure 1, Cols. 102. Recent models of a child swing manufactured by both Plaintiffs and Defendant feature a streamlined two-legged support system with the child's seat supported by a single arm connected to a unit positioned at the top of the support legs. *See* Plaintiffs' Opening Brief at 2 (showing Plaintiffs' product) and at 3 (showing Defendant's accused product). The disputed claims of the '548 patent include

Independent Claim 1:

1. A child swing comprising

a support stand,

a swing frame mounted on the support stand for reciprocating swinging movement along a swing arc in a forward swing direction and an opposite rearward swing direction,

a base pivotably coupled to the swing frame for angular movement about a pivot axis between a forward-facing position facing in the forward swing direction and a side-facing position facing in a side direction extending at an angle to the forward swing direction, and

a child seat coupled to the base to pivot therewith relative to the swing frame.

Exh. A, Col. 7 at 42-56.

Dependent Claim 10 claim:

> 10. The child swing of claim 1,
>
> wherein the base includes a platform supporting the child seat and a latch assembly coupled to the platform for movement between a latching position engaging the child seat to retain the child seat on the platform and a releasing position disengaging the child seat to release the child seat form [*sic*] the platform.[6]

Exh. A, Col. 9 at 7-12.

The '548 patent's specification ("Specification") states that the invention "relates . . . particularly to a child swing including a child seat that is convertible between a chair configuration and a cradle configuration," Exh. A, Col. 1 at 6-9, and is capable of being positioned on a child swing that permits the convertible child seat to swing in either a front to back or side to side movement. *Id.,* Col. 1 at 25-35. This change in position of the child seat is accomplished by moving the child seat, which is secured by a latch to the base, "coupled to the swing frame for angular movement about a pivot axis." *Id.* Thus, when the child seat is pivoted on the base so that the child is facing in the same direction as the arc of the swinging movement of the swing frame, the child seat with a child seat in it is able to move back and forth in a head to toe motion; when the child seat in pivoted on the base of the swing frame at a right, *e.g.*, 90° angle, to the arc, the child seat, and the child, swings in a side to side movement along the same arc. *Id.* at 25-35; Col. 2 at 6-16. In the preferred embodiment, the "convertible" child seat may adjusted to a "substantially planar configuration," *id.*, Col. 1 at 40-46, and when the child seat is pivoted at a right angle to the arc of the swing, achieves a "cradle"-like

[6] Unless indicated otherwise, bracketed material is added.

"configuration" and movement of the child who is positioned in the child seat. *Id.*; Col. 2 at 20-34.

In this claim construction proceeding, the parties raise issues directed to the terms of the '548 invention as they relate to construction of the terms (1) "child seat," (2) "swing frame" or "frame," (3) "child swing," (4) "pivotably coupled . . . for angular movement about a pivot axis between a forward-facing position facing in the forward swing direction and a side-facing position facing in a side direction extending at an angle to the forward swing direction" ("Directional Terms"), (5) as to Claim 10, "latch assembly," and (6) "base."

DISCUSSION

It is basic that "the claims of the patent define the invention to which the patentee is entitled to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed.Cir. 2005). "[T]he words of a claim are generally given their ordinary and customary meaning" that they would have to be one of ordinary skill in the art at the time of the invention. *Phillips*, 415 F.3d at 1313-14 (citing *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed.Cir. 1996)). In determining such meaning, courts emphasize intrinsic evidence which includes the patent, its claims and specification[7] and, where relevant, the patent's prosecution history. *See Phillips*, 415 F.3d at 1317. In addition to the importance of the language (terms) of the claim itself, where the meaning of a term is disputed, courts are directed to consider the patent's specification of which the claim are

[7] The patent's specification includes the title of the invention, cross-references to related applications, a statement regarding federally sponsored research or development, names of parties to a joint research agreement, a computerized appendix, prior disclosures, background of the invention, a description of any drawings, a detailed description of the invention, a claim or claims, an abstract of the invention, and a sequence listing. 37 C.F.R. § 1.77(b).

a part. *Phillips*, 415 F.3d at 1315 (citing *Markman*, 52 F.3d at 978-79; *Vitronics*, 90 F.3d at 1582). Nevertheless, it is improper to import limitations from the specification, such as a preferred embodiment. *See Phillips*, 415 F.3d at 1323. Additionally, all claim terms should be construed to be consistent with the relevant specification, *see Playtex Prods., Inc. v. Proctor & Gamble Co.*, 400 F.3d 901, 906 (Fed.Cir. 2005), and it is improper to eliminate, ignore, or "read out" a claim term in order to extend a patent to subject matter disclosed, but not claimed. *See, e.g., Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp.,* 93 F.3d 1572, 1582-83 (Fed.Cir. 1996). Further, courts are to give weight to statements in the specification describing a feature of the invention to require inclusion of such feature in defining the scope of disputed claims. *See Honeywell Int'l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1318 (Fed.Cir. 2006); *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1343 (Fed.Cir. 2001). The court is required to give a disputed claim term the meaning it would have to "one of ordinary skill in the art at the time of the invention." *Markman*, 52 F.3d at 986. Here, as Defendant concedes the difference between its definition of a person of ordinary skill in the art and that of Plaintiffs' is immaterial, Defendant's Opening Brief at 6, n. 6, the court applies Plaintiffs' definition of such person as one with an associates degree or working toward an associates degree in any technical field with one year of work experience designing products for infants. Plaintiffs' Opening Brief at 11, n. 6.

1. Child Seat.

Defendant argues that as to the term "child seat," such term in the '548 patent is limited to a child seat designed to be capable of functioning "apart from the swing," *e.g.*,

as a car seat. Defendant's Opening Brief at 18-22; Defendant Responsive Brief at 7-9; Defendant's Supplemental Brief at 4-6. Defendant maintains that this limitation is necessary to defeat Plaintiffs' attempt to define this term without reference to the concept of removability, Plaintiffs' Opening Brief at 22 ("'child seat' should have its ordinary meaning, or 'a seat adapted for receiving a child'") and thereby improperly "expand the invention to include more than the inventors contemplated." Defendant's Supplemental Brief at 8. Plaintiffs counter by pointing to the text of Claim 1 which fairly read does not state that a removable seat, *i.e.*, capable of functioning apart from the child swing, is a required element of the patent. Plaintiffs' Opening Brief at 23. Specifically, the sole reference to the element of a child seat in Claim 1 describes "a child seat coupled to the base to pivot therewith relative to the swing frame." Exh. A Col. 7 at 55-56. Plaintiffs also note that dependent Claim 10, unlike Claim 1, requires a child swing with child seat that can be "disengag[ed] . . . form [*sic*] the platform." Exh. A Col. 9 at 11-12. Plaintiffs' Opening Brief at 24 (quoting *Phillips*, 415 F3d. at 1315 ("[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.") (citing *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (2004)))).[8] In opposition, Defendant maintains that Plaintiffs' reliance on the "principle of claim differentiation," Defendant's Supplemental Brief at 5 n. 2, is "overcome" by the rule that "'the meaning of a term in a claim must be defined in a manner that is consistent with its appearance in other claims.'" *Id.* at 5 (citing *Landers v. Sideways, LLC,* 142 F. App'x 462, 467 (Fed.Cir. 2005); *CVI/Beta Ventures, Inc. v. Tura LP,* 112 F.3d 1146, 1159 (Fed.Cir. 1997)).

[8] Unless indicated otherwise, underlining is added.

Defendant's contention as to this term dispute suffers from two weaknesses. First, while Plaintiffs candidly admit that a removable seat feature that may also function as a car seat is included in the preferred embodiment of the '548 invention, Plaintiffs' Opening Brief at 23; Plaintiffs' Responsive Brief at 21, Plaintiffs point to settled principles of claim construction that "it is improper to read limitations from a preferred embodiment described in the specification — even if it is the only embodiment — into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.'" Plaintiffs' Opening Brief at 23 (quoting *Liebel-Flarsheim Co.*, 358 F.3d at 913 (Fed.Cir. 2004)). Additionally, the fact "that a patent asserts that an invention achieves several objectives does not require that each of the claims be construed as limited to structures that are capable of achieving all of the objectives." *Liebel-Flarsheim Co.*, 358 F.3d at 908-09. Thus, although the Specification, specifically the Background and Summary of the Invention, refers to consumer preference for "a versatile child swing seat that could be removed," Exh. A, Col. 1 at 17-23, and that the patent "relates" to a child swing with both rotatable and removable seats useable as "a car seat, a car bed, or an infant carrying devise," *id.,* Col. 1 at 6-11, 20-24, nothing in these descriptions of the advantages of the invention indicates the inventors' intention that Claim 1 is limited to a child seat that is both rotatable and removable. Moreover, in order for Claim 1 to be limited to a removable seat for such alternate purposes, the Specification would require a "clear disclaimer" of a swing without a removal child seats. *See Liebel-Flarsheim Co.*, 358 F.3d at 909; *see also Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1327 (Fed.Cir. 2002). A fair reading of the '548 Specification reveals no such clear disclaimer. As such, there is also no merit in Defendant's

contention that a failure to limit Claim 1 to a child seat with removable capability results in construction inconsistent with the scope of a removable child seat as claimed in Claim 10. Nor, contrary to Defendant's assertion, Defendant's Supplemental Brief at 5, would adoption of Plaintiffs' construction, excluding removability, create an improperly inconsistent construction when compared to Claim 10's description of removability of the child seat, *viz.* "a releasing position disengaging the child seat to release the child seat from the platform." Exh. A, Col. 9 at 11-12. Claim 10's limitation of a child seat latching system permitting "engaging" and "disengaging" of the child seat to the base and platform of the swing support is but one component of this claim. As Claim 1, by its terms, excludes the requirement of child seat removability, to adopt Defendant's construction requiring seat removability in construing Claim 1 presupposes inconsistency in construction between Claim 1, an independent claim and Claim 10, where none exists, and, contrary to governing precepts of claim construction, permits statements of a preferred embodiment to dictate claim construction outcomes. *See, e.g., Rambus Inc. v. Infineon Tech AG,* 318 F.3d 1081, 1094-95 (Fed.Cir. 2003) (reversing district court's limiting claim construction based on references to statements contained in Summary of Invention where the patent's specification and prosecution history failed to show patentee intended such limitation, *i.e.*, "bus" means "multiplexed set of signal lines" as opposed to ordinary meaning of the term "bus" as "a set of signal lines.").

That the repeated references in the Specification to a removable seat as an advantageous feature of the '548 patent appear exclusively in the preferred embodiment descriptions of the patent also disposes of Defendant's belated "narrow

disclosure" theory, Defendant's Supplemental Brief at 9-10, under which such references disclosing only a removable seat are deemed to "define and limit the scope of the claims." *Id.* at 8. Here, significantly, the Specification, specifically the Abstract, makes no reference to a child seat removability feature of the invention. Exh. A. *See* Doc. No. 113-2 at 2. Further, the specification also clarifies that "the invention has been described in detail with reference to a preferred embodiment, variations and modifications exist within the scope and spirit of the invention as described and defined in the following claims." Exh. A, Col. 7 at 38-40. Despite Defendant's assertion that Plaintiff's proposed construction of this term would "impermissibly broaden the scope of the claims beyond the invention described in the specification of the '548 patent," Defendant's Supplemental Brief at 10, based on its review of this record and applicable law, the court finds Defendant's contention, if accepted, would impermissibly narrow the scope of the patent's claims. Plaintiffs' proposed construction of the term "child's seat" as used in Claim 1 of the '548 patent should therefore be adopted.

2. Swing Frame or Frame.

In Claim 1 of the '548 patent, Plaintiffs claim a "child swing comprising

a support stand,

a swing frame mounted on the support stand for reciprocating swinging movement along a swing arc in a forward swing direction and an opposite rearward swing direction,

a base pivotably coupled to the swing frame for angular movement about a pivot axis between a forward-facing position facing in the forward swing direction and a side-facing position facing in a side direction extending at an angle to the forward swing direction, and

a child seat coupled to the base to pivot therewith relative to the swing frame."

Exh. A, Col. 7 at 43-56.

The parties disagree as whether the "frame" as used in Claim 1 should be read to mean, as Plaintiffs contend, "a rigid support structure," Plaintiffs' Opening Brief at 11, or, as Defendant argues, "a support structure," Defendant's Opening Brief at 8. The difficulty with Defendant's proposed meaning, which excludes the notion that the invention requires the element of rigidity in the disclosed swing frame connected to the "hanger arms," Exh. A, Col. 4 at 2, is that it ignores the limitation of the invention that the 'child seat" be "coupled to [a] base" which in turn is "pivotably coupled to the swing frame for angular movement about a pivot axis," Exh. A, Col. 7 at 50-56, thereby permitting the swing frame and child seat to be positioned in a face forward or side to side orientation. *Id.* at 51-56. Although, as Defendant asserts, the language of Claim 1 does not expressly limit the element of the swing frame to a rigid support structure, Defendant's Opening Brief at 9, and the specification alludes to non-rigid swing frame elements, such as straps or chains, *id.*, yet as would be surely evident to one reasonably skilled in the art, such non-rigid support structures could not permit the mechanical function, described by the specification, of allowing the child seat to securely pivot to an angular position on the base thereby permitting a different swing orientation for the child without, as Plaintiffs correctly observe, Plaintiffs' Opening Brief at 9, resulting in a twisting and entangling of such non-rigid components, which would inherently prevent the child seat from securely maintaining its angular, *i.e.*, side to side orientation during the swinging of the child seat. In addition, as the Specification, by reference to a preferred embodiment which includes a spring motor to power the swing motion of the child seat, Plaintiffs' Opening Brief at 12 (referencing Exh. A, Col. 4 at 13-

16), explains, it is the swing frame, a rigid structure, that enables this motive force, intended to initiate and maintain the swing movement, to be transmitted to the child seat, in order to achieve a reciprocating swing motion, a physical impossibility if a non-rigid support structure were required by the invention, as Defendant's proposed construction requests. As Plaintiffs point out, use of non-rigid swing frame support structures, such as ropes, chains, and straps would also render the child seat motionless because the motion force of the power source could not be transmitted to the base and child seat, a result destructive of the main benefits of the '548 invention. Finally, accepted definitions of the term "frame" include the notion of rigidity. *See, e.g.,* Waks Declaration Exh. G, RANDOM HOUSE COLLEGIATE DICTIONARY, Revised Ed. (1988) at 524, ("2. *A rigid structure* . . . used as a major *support* in . . . furniture, etc.") (italics added). *See also Phillips*, 415 F.3d at 1312-13 (claim terms should generally be given their ordinary meaning).

Defendant attempts to demonstrate the lack of rigidity needed for a child swing frame as disclosed in '548 by comparison to a 1915 patent for a primarily adult swing, in order to defeat Plaintiffs' contention that a rigid swing frame structure is required. Defendant's Responsive Brief at 7. However, a careful comparison of the two patents demonstrates Defendant's attempt is unavailing. Specifically, Defendant contends that the 1915 patent ("the Shermer patent) shows it is possible for a chain swing frame to enable a rotatable swing seat by a multi-positional — four positions — pivotable swing chair. An inspection of the diagram of the Shermer patent reveals salient differences between the mechanical aspects of that patent and Plaintiffs' '548 patent. In particular, unlike the swing support system of the '548 patent, the chains of the Shermer patent

suspend a rigid metal swing frame and, as such, are not directly connected to the rotatable base on which the swing seats are attached. *Compare* Amy Declaration Exh. 4 at 2, Fig. 1 #4; Fig. 2, Fig. 3 #4. As the Shermer patent itself explains, the "end bars" of the "rectangular frame," "preferably of metal," are "shaped . . . at their extremities to accommodate the chains by means of which the swing frame is suspended . . .." Defendant's Exh. 4, Doc. No. 114-6, Col. 1 at 52, 55, 56; Col. 2 at 57-58. Thus, the rotatability of the swing seats of the Shermer patent is made possible because of the rigidity of the metal swing frame on which the seats are mounted. Similarly, the swing frame in the '548 patent consists of rigid swinging hanger arms, illustrated in Exh. A, Fig. 1, Nos. 14, 16, 42, 44, 46, 48, connected to the swing frame, No. 15, Exh. A, Col. 4 at 45-55, the lower portions of which are "positioned to lie under pivotable base." *Id.* at 50. It is therefore unpersuasive to assert, as does Defendant, that a pivotable child seat can be achieved through the use of a non-rigid swing frame using chains as described in the Shermer invention as relied upon by Defendant. Plaintiffs' proposed construction of the term "frame" to include a "a rigid support structure" should therefore be adopted.

3. Child Swing.

The parties' dispute over the proper construction of this term is wholly semantic. Plaintiffs propose the term be defined as "a swing adapted for use by a child," Plaintiffs' Opening Brief at 24; Defendant's proposed definition is "a swing designed to accommodate a child." *Id.* According to Plaintiffs, their proposed definition "appears to mean the same thing" as Defendant's, Plaintiffs' Responsive Brief at 5; Defendant maintains Plaintiffs' definition unnecessarily introduces ambiguity. Defendant's Opening

Brief at 8. The court fails to discern any such ambiguity. However, to resolve the dispute, the undersigned finds that because the Specification unambiguously refers exclusively to a child's swing, and not one for an adult or adolescent, the following construction of this term should be adopted: "a swing designed exclusively for use by a child." *Ultratech Stepper, Inc. v. ASM Lithography, Inc.*, 97 Fed. Appx. 914, 917 (Fed.Cir. Mar. 30, 2004) (court may construe and apply its own meaning to a disputed term).

4. Directional Terms.

As relevant to this issue, Claim 1 discloses a child seat that couples to a base which in turn is "pivotably coupled . . . for angular movement about a pivot axis between a forward-facing position facing in the forward swing direction and a side-facing position facing in a side direction extending at an angle to the forward swing direction." Exh. A, Col. 7 at 50-54. Plaintiffs urge this portion of the claim be construed as follows: "connected to allow for rotation between at least two fixed positions, including a forward-facing position and a side-facing position." Plaintiff's Opening Brief at 14. Defendant urges that the directional elements of the phrase be defined as follows: "forward swing direction" means "the direction wherein the swing frame travels from the rear to the front of the support stand;" "forward-facing position" means the "position in which the front of the child seat faces the front of the support stand;" and the "side-facing position" means the "position in which the front of the child seat faces either of the two sides of the support stand." Defendant's Opening Brief at 10-16. Neither of these proposed constructions are acceptable. Plaintiffs' proposal is insufficient in that it

fails to define, as it should to facilitate a more immediate understanding, the disputed terms "forward-facing position," forward swing direction," and "side-facing position" by reference to the position of the child seated in the child seat. On the other hand, Defendant's proposals may not be accepted because they construe the disputed terms by reference to the four-legged support stand, included in the Specification as a preferred embodiment which reference falls outside the explicit terms of Claim 1, and thus may not be adopted. *See Phillips*, 415 F.3d at 1323.

More specifically, as including a rotatable child seat feature, the invention describes a child swing where, by changing the position of the pivotable seat on the base, the movement of the child seat, to accommodate a child to be seated in the child seat, is converted from a position, or swing movement, of front to back, not in reference to the particular design of the support stand, but by reference to the aspect of the child as seated, or who is to be seat, in the child seat, *e.g.*, head to toe, when viewing the child's frontal body, *i.e.*, face, aspect. When, in contrast, and as specified by the invention, the child seat is positioned or pivoted, at right angles to the child swing arc, achieved by the swing through manual, spring motor operation, the child moves or swings from side-to-side in the same arc, again when viewing the child's frontal aspect.

Although it is true as Defendant contends that such movements may also reasonably be construed to be described in reference to the front and rear of the support stand, Defendant's Opening Brief at 10-16, such reference is a matter of coincidence with the design portrayed in the preferred embodiment, but it is not a limitation of the invention as stated in Claim 1. Adoption of Defendant's proposed construction would therefore contravene the rule against attempted inclusion of

limitations based on a preferred embodiment into a disputed claim. *See Phillips*, 415 F.3d at 1323. Defendant's reliance on the dictionary definition of the term "forward" as "at, toward, or of the front, or forepart," Defendant's Opening Brief at 10, is thus inapposite as the invention discloses a child swing with a pivotable seat to achieve two differing swing movements or experiences for a child, *viz.*, a front to back or head to toe movement or a side to side movement along with the same arc created by the swing's mechanism by a user's pushing on the swing seat. To this extent, Defendant's contention, "that the term 'forward swing direction' must be relative to something," *id.*, is correct: the directional term "forward swing direction" is "relative" to the position of the child, while seated in the child seat, for whose enjoyment the rotatable child seat, as disclosed by the '548 patent, was created. Whether the support stand element of Claim 1 is four legged, or some other shape is not a limitation of the Claim and is irrelevant to a proper understanding of the disputed Directional Terms of the Claim. Thus, the court finds this disputed term should be construed to mean "connected to allow for rotation between at least two fixed positions that is a forward facing position and a side to side position of a child while seated in the child seat." *See Ultratech Stepper, Inc.*, 97 Fed.Appx. at 917 (court may construe and apply its own meaning to a disputed term).

5. Latch Assembly.

In Dependent Claim 10, the '548 patent asserts the child swing described in Claim 1, "wherein the base includes a platform supporting the child seat and a latch assembly coupled to the platform for movement between a latching position engaging the child seat to retain the child seat on the platform and a releasing position

disengaging the child seat to release the child seat form [*sic*] the platform." Exh. A, Col. 9 at 7-12. Plaintiff submits the term "latch assembly" should be given its ordinary meaning, based on standard definitions, as "a fastening structure with mating mechanical parts." Plaintiffs' Opening Brief at 24-25 (citing AM. HERITAGE DICTIONARY at 716 (2d Coll. Ed. 1982) ("[a] fastening or lock, usually consisting of a bar that fits into a latch, slot, or cavity."); WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY at 675 (1988) ("any of various devices in which mating mechanical parts engage to fasten")). Defendant asserts that the term should be construed to mean "a lug that fits into a slot, and is lifted or released by a lever." Defendant's Opening Brief at 22. Defendant argues that such definition is more consistent with the patent's specification, *id.* at 23, particularly the discussion in the Detailed Description of the Drawings, Exh. A, Col. 7 at 29-37, explaining that in the case of a '548 child swing having a removable child seat for optional use, such as a child car seat, the child seat may be detached or released from the base of the swing frame (and secured or reinstalled on the base) using "swinging latch assemblies" in which "locking lugs disengage the lug-receiving slots formed in the lower shell position of the child seat." Defendant also points to the repeated references to the lug, slot, and lever latch system for the invention claimed in Claim 10 in the Specification ("the lug, slot, and lever latch system"). Defendant's Supplemental Brief at 9 citing Exh. A, Col. 7 at 29-37; Col. 5 at 27-30; Fig. 2. However, as Plaintiffs maintain, it is generally impermissible to limit a claim based on features revealed in a preferred embodiment and the disclosures of the lug, slot and lever latch system described in the Specification constitute such a preferred embodiment, Plaintiffs' Opening Brief at 25 (citing *Liebel-Flarsheim*, 358 F.3d at 913). Defendant counters arguing that "consistent

use of a claim term in a particular manner may limit a claim term." Defendant's Supplemental Brief at 8 (citing cases). While the Specification does repeatedly make reference to the lug, slot, and lever latch system, the Specification demonstrates that such lug, slot and lever latch system is, as Plaintiffs contend, a preferred embodiment. *See* Plaintiffs' Supplemental Brief at 4 (citing Exh. A, Col. 2 at 35-58 ("Also in preferred embodiments, the base includes a platform supporting the lower shell portion of the child seat and a latch assembly coupled to the platform for movement between a latching position engaging the child seat to retain the child seat on the platform and a releasing position disengaging the child seat to release the child seat from the platform. . . . Illustratively, the child seat is constructed so that it can be removed from its mounted position on the platform by manual operation of the latch assemblies.")).

Thus, while admittedly detailed and repetitive, the lug, slot and lever latch system described in the Specification is nonetheless a description dependent on a preferred embodiment of the invention, specifically, as the "lug" is designed to engage the "slot" formed in the lower portion of the convertible seat, a prominent feature of the invention's preferred embodiment. As such, the '548 patent's Specification does not require that the latch assembly term as used in Claim 10 be limited to such meaning. Accordingly, the court finds that this term should be construed in accordance with its generally accepted meaning as Plaintiffs propose.

6. Base.

The parties also dispute the construction of the term "base" as used in both Claim 1 and Claim 10. Specifically, Claim 1 claims, as relevant, a "child swing

comprising . . . a base pivotably coupled to the swing frame for angular movement about a pivot axis," and a "child seat coupled to the base to pivot therewith." Exh. A, Col. 7 at 43, 50-51, 55. Claim 10 further claims the child seat, as described in Claim 1, where "the base includes a platform supporting the child seat and a latch assembly coupled to the platform" allowing the child seat to be secured or released from the platform. Exh. A, Col. 9 at 7-12. Plaintiff contends the term base should mean "a supporting part . . . connected to the swing frame." Plaintiffs' Opening Brief at 18. Defendant, like Plaintiffs, while asserting that the term "base" as used in Claim 1 means "a supporting part," seeks to limit the scope of Claim 10 by requiring that the supporting part is the "lowest or bottom supporting part" of the swing frame. Defendant's Opening Brief at 16. In support of its position, Defendant's proposal asserts that Plaintiffs' construction is "over expansive" and constitutes an attempt to cover many of Plaintiffs' current child swing products in which, according to Defendant, at least part of the child seat support structure is located above the child seat. Defendant's Responsive Brief at 4. However, Defendant's position is in error for several reasons. First, nowhere in the '548 patent Specification is the "base" described as an element of the invention requiring its location in the structure of the swing as specifically located below the child seat. *See* Exh. A (*passim*). Second, by the same token, neither Claim 1 nor Claim 10 indicate such a locational requirement. *See* Exh. A, Col. 1 at 42-56 (*passim*); Col. 9 at 7-12 (*passim*). Rather, the Specification makes clear the base must be "pivotably coupled to the swing frame," and that the "child seat" be "coupled to the base." Exh. A, Col. 7 at 50-55. Third, the ordinary definition of the word "base" includes "[a] supporting part or layer" as an alternative meaning to definition of the term base as "[t]he lowest or

bottom part." *See* Plaintiffs' Opening Brief at 19 (quoting AM. HERITAGE DICTIONARY at 160 (2d Coll. Ed. (1982)). It is true that the Specification describes the base portrayed in figures of the invention as including a platform capable of facilitating a latching system integral with the lower section of a removable child seat, rather than such a base supporting structure located above the child seat, *see* Exh. A, Col. 5 at 5-12; however, as such figures illustrate a preferred embodiment of the invention, the associated descriptions do not limit the scope of the invention asserted in Claims 1 and 10. *See Phillips*, 415 F.3d at 1323 (limitations of particular embodiments should not be imposed to limit the claim to a particular embodiment). Finally, because the base of the invention is not, in fact, the lowest supporting part, as it is supported by the lower portions of the rigid swing frame, *see* Exh. A, Figs. 1 & 5 (Nos. 44 and 48), construing, as Defendant urges, the "base" to be located at the "lowest or bottom supporting part" would result in "reading-out" the described embodiment, contrary to well-recognized claim construction principles. *See InterDigital Communications, LLC v. Int'l Trade Com'n,* 690 F.3d 1318, 1326 (Fed.Cir. 2012) (claim construction erroneous because it "would mean that neither . . . preferred embodiments described in the . . . specification would fall within the scope of the claims."); *On-Line Tech. v. Bodenseewerk Perkin-Elmer GMBH*, 386 F.3d 1133, 1138 (Fed.Cir. 2004) ("'[A] claim interpretation that excludes a preferred embodiment from the scope of the claim is rarely, if ever, correct.'")) quoting *Vitronics Corp.*, 90 F.3d at 1583)). A similar analysis must therefore apply with respect to the term "base" as used to disclose the invention asserted in Claim 10. Whether a latching system for alternative release and removal of a child seat capable of transporting a child could as easily function from above the child seat need

not be addressed, as the independent Claim 10 does not require the base to be located at the lowest or bottom supporting part of the swing. As discussed, the Claim only requires the base be "pivotably coupled" to the swing frame. Exh. A, Col. 7 at 50-51.

CONCLUSION

Based on the foregoing, the District Judge should adopt the claim constructions as determined hereinabove for the purpose of further proceedings in this matter.

Respectfully submitted,

LESLIE G. FOSCHIO
UNITED STATES MAGISTRATE JUDGE

Dated: June 24, 2014
Buffalo, New York

Pursuant to 28 U.S.C. §636(b)(1), it is hereby

ORDERED that this Report and Recommendation be filed with the Clerk of the Court.

ANY OBJECTIONS to this Report and Recommendation must be filed with the Clerk of the Court within fourteen (14) days of service of this Report and Recommendation in accordance with the above statute, Rules 72(b), 6(a) and 6(e) of the Federal Rules of Civil Procedure and Local Rule 72.3.

Failure to file objections within the specified time or to request an extension of such time waives the right to appeal the District Court's Order. *Thomas v. Arn*, 474 U.S. 140 (1985); *Small v. Secretary of Health and Human Services*, 892 F.2d 15 (2d Cir. 1989); *Wesolek v. Canadair Limited*, 838 F.2d 55 (2d Cir. 1988).

Let the Clerk send a copy of this Report and Recommendation to the attorneys for the Plaintiffs and the Defendant.

SO ORDERED.

LESLIE G. FOSCHIO
UNITED STATES MAGISTRATE JUDGE

DATED: June 24th, 2014
Buffalo, New York

APPENDIX A

US005562548A

United States Patent [19]

Pinch et al.

[11] Patent Number: 5,562,548

[45] Date of Patent: Oct. 8, 1996

[54] **CONVERTIBLE CHILD SWING**

[75] Inventors: **Daniel R. Pinch**, Hope; **Dennis M. Turner**, Scipio, both of Ind.

[73] Assignee: **Cosco, Inc.**, Columbus, Ind.

[21] Appl. No.: **334,597**

[22] Filed: **Nov. 4, 1994**

[51] **Int. Cl.**[6] **A63G 9/16**

[52] **U.S. Cl.** **472/119**; 472/118; 297/256.12; 297/256.16; 297/344.21

[58] **Field of Search** 472/118, 119; 5/105, 106, 107; 297/130, 256.16, 256.12, 344.21, 344.22

[56] **References Cited**

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D. 325,132	4/1992	Cone .	
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4,452,446	6/1984	Saint .	
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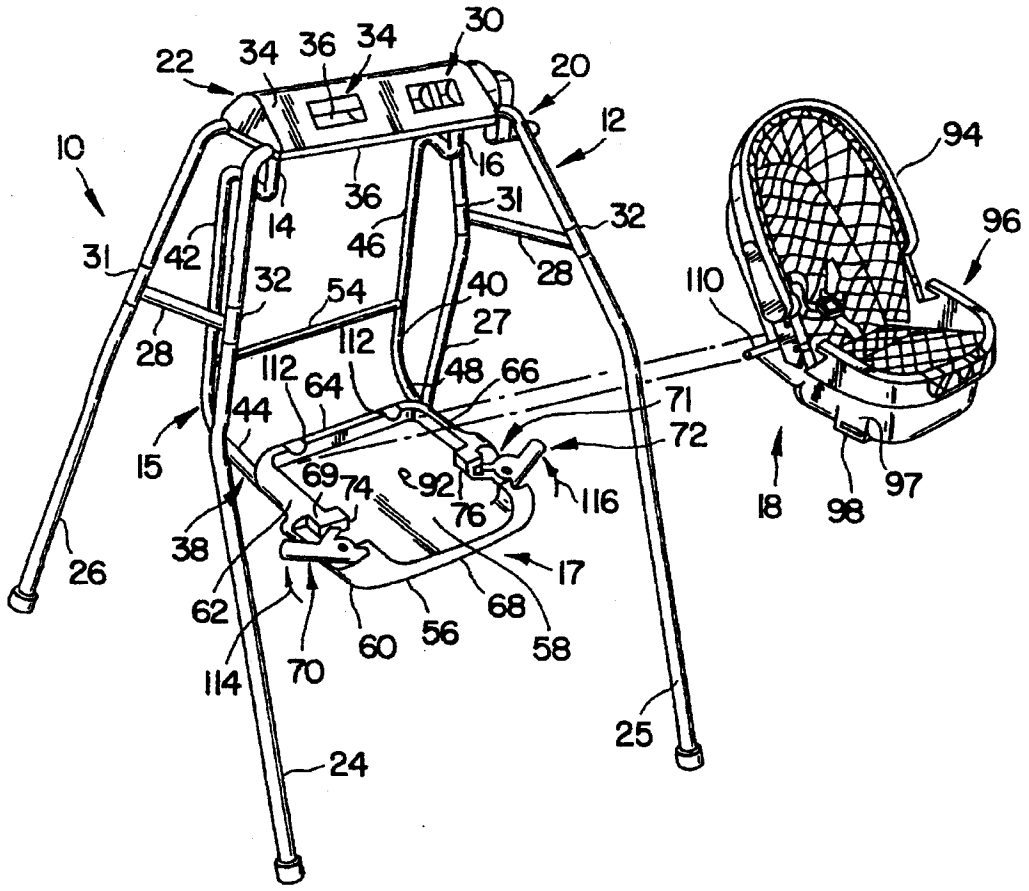
4,998,307	3/1991	Cone .	
5,083,773	1/1992	Saint .	

Primary Examiner—Kien T. Nguyen
Attorney, Agent, or Firm—Barnes & Thornburg

[57] **ABSTRACT**

A child swing including a support stand, a swing frame mounted on the support stand for reciprocating swinging movement along a swing arc in a forward swing direction and an opposite rearward swing direction, a base pivotably coupled to the swing frame for angular movement about a pivot axis between a forward-facing position facing in the forward swing direction and a side-facing position facing in a side direction extending at an angle to the forward swing direction, and a child seat coupled to the base to pivot therewith relative to the swing frame.

19 Claims, 3 Drawing Sheets



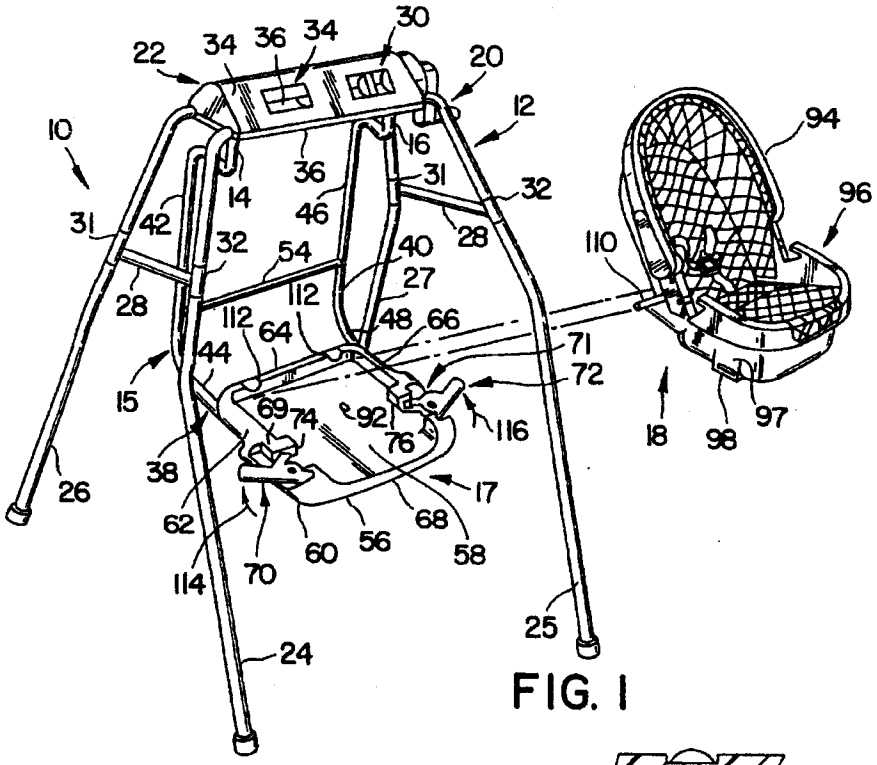


FIG. 1

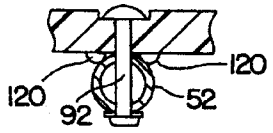


FIG. 3

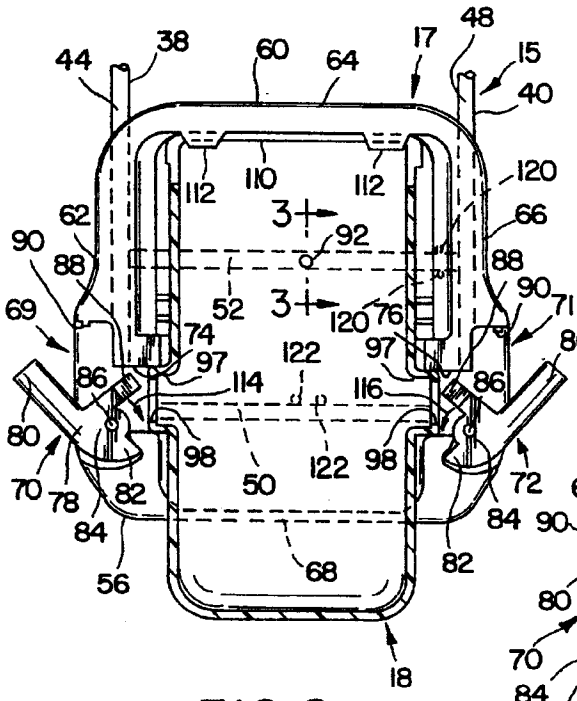
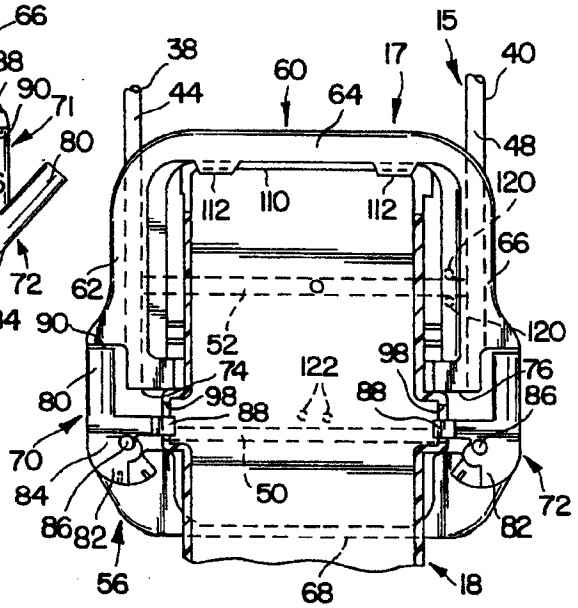


FIG. 2



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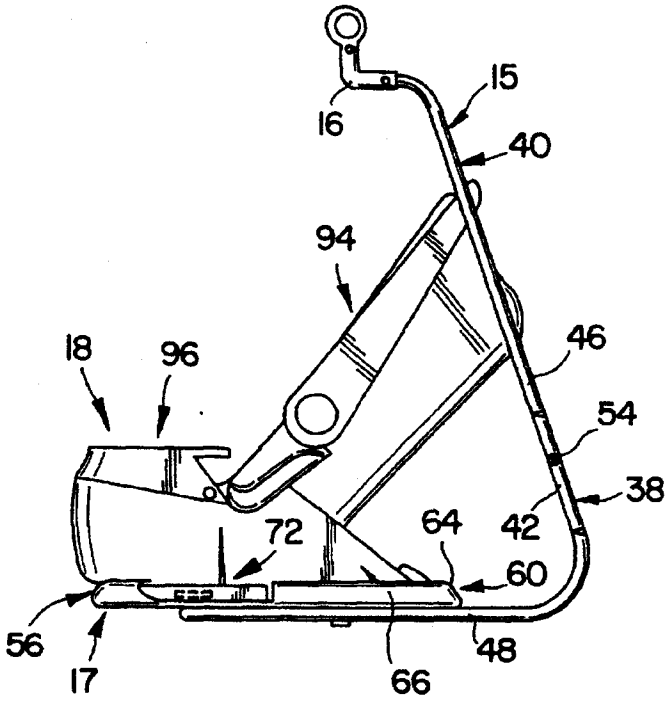
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FIG. 5

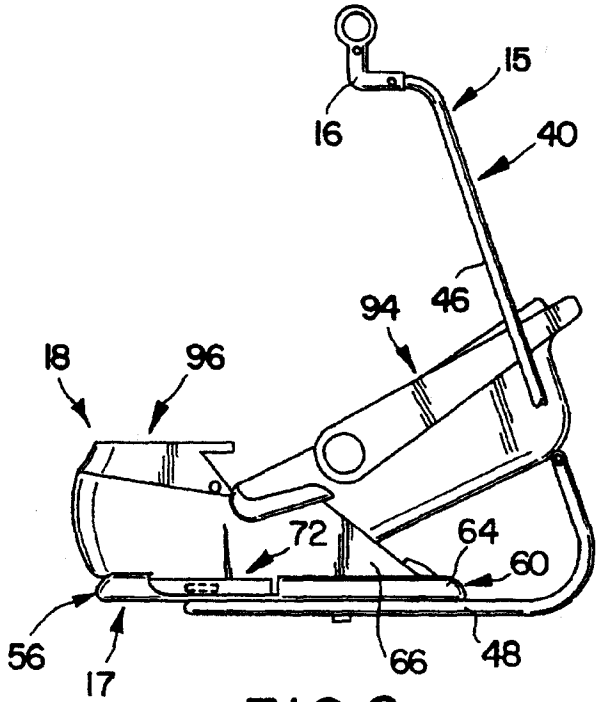
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FIG. 6

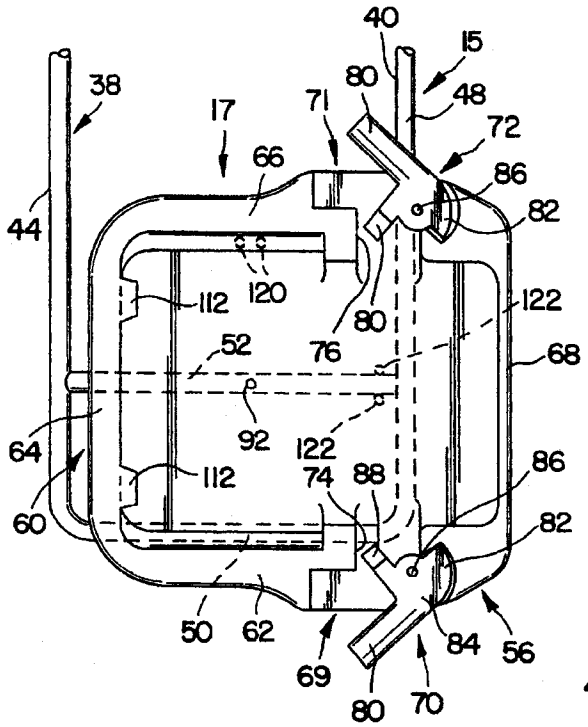

FIG. 8

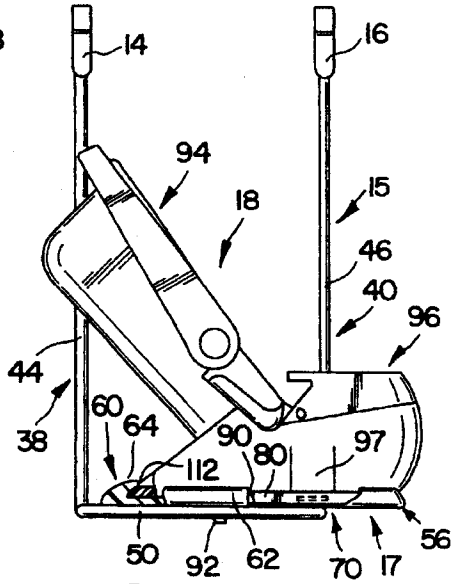

FIG. 9

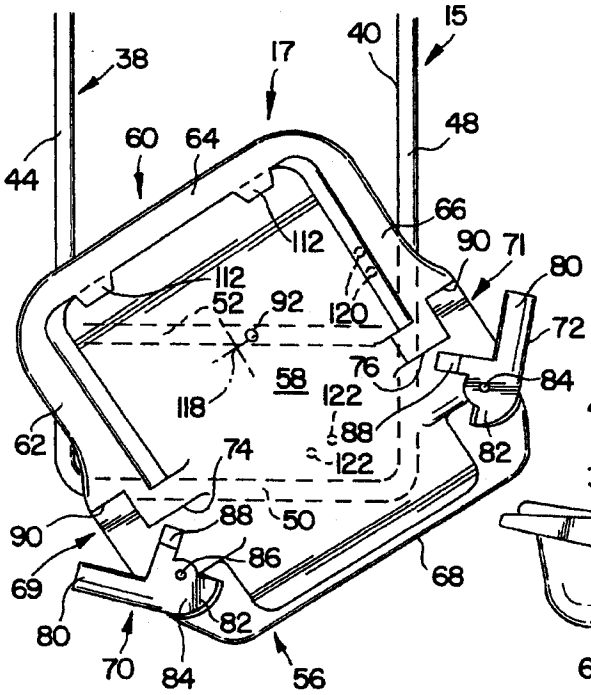

FIG. 7

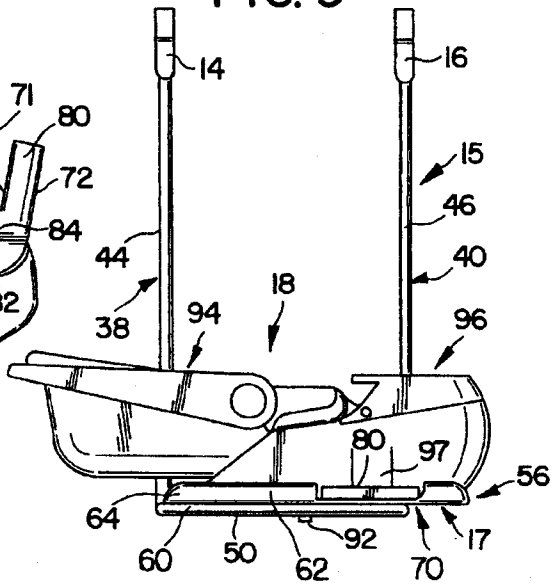

FIG. 10

CONVERTIBLE CHILD SWING

BACKGROUND AND SUMMARY OF THE INVENTION

The present invention relates to swings for children, and particularly to a child swing including a child seat that is convertible between a chair configuration and a cradle configuration. More particularly, the present invention relates to a child swing having a removable child seat that can also function as a car seat or car bed.

Child swings typically include child seats supported for movement on a swingable frame. Child swings are disclosed, for example, in U.S. Pat. Nos. 2,975,866; 4,165,872; 4,323,233; 5,083,773; 4,452,446; 4,807,872; and 4,165,872.

What is needed is a multi-position child swing that is more versatile than a traditional child swing. Consumers would appreciate a child swing having a multi-position child seat that could be converted easily at the option of the consumer from a chair to a cradle. Consumers would welcome a versatile child swing seat that could be removed easily from a swing frame in the child swing and used as a car seat, a car bed, or an infant-carrying device.

According to the present invention, a child swing includes a support stand and a swing frame mounted on the support stand for reciprocating swinging movement along a swing arc in a forward swing direction and an opposite rearward swing direction. The child swing further includes a base pivotably coupled to the swing frame for angular movement about a pivot axis between a forward-facing position facing in the forward swing direction and a side-facing position facing in a side direction which extends at an angle to the forward swing direction. A child seat is coupled to the base to pivot therewith relative to the swing frame.

In preferred embodiments, the child seat includes a generally rigid shell assembly for receiving a child. The shell assembly includes a lower shell portion for receiving the lower body of a child seated therein and an upper shell portion for receiving the head and upper body of a child seated therein. The upper shell portion is pivotably coupled to the lower shell portion to permit a caregiver to change the configuration of the shell assembly from a "cradle" configuration wherein the upper and lower shell portions are aligned in a substantially planar configuration and a "chair" configuration in which the upper shell portion is aligned at an angle relative to the lower shell portion. Illustratively, the lower shell portion is mounted to the pivotable base included in the child swing so as to permit a caregiver to move the upper shell portion relative to both the base and the lower shell portion. This feature enables the caregiver to convert the child seat between a chair configuration and a cradle configuration while the child seat is mounted in a fixed position on the pivotable base included in the child swing.

Illustratively, the support stand includes a laterally extending swing motor housing containing means for swinging the swing frame along the swing arc and four support legs holding the swing motor housing in an elevated position above the ground. The swing frame includes a first swing arm having an upper portion coupled to the swing motor housing and a lower portion positioned to lie underneath the pivotable base. The swing frame also includes a second swing arm having an upper portion coupled to the swing motor housing and a lower portion positioned to lie underneath the pivotable base and in spaced-apart relation to the lower portion of the first swing arm. A base cross bar is positioned to lie underneath the pivotable base and interconnect the lower portions of the first and second swing arms. A vertical pivot post is mounted on the base cross bar and the base is mounted on that pivot post for pivotable movement between the forward-facing position and the side-facing position.

In use, the child seat mounted on the pivotable base will typically be converted by the caregiver to a chair configuration whenever the base is arranged to lie in its forward-facing position. This arrangement will allow the child swing to function in a manner familiar to many caregivers since it will provide a forward-facing chair that swings back and forth along a swing arc in forward and rearward swing directions. A child seated in a child seat converted to the chair configuration will face in the forward swing direction during swinging of the swing frame carrying the pivotable base and the child seat.

Alternatively, the caregiver can elect to pivot the base about its pivot post through a 90° angle relative to the swing frame to cause a front edge of the base to face in a sideways direction instead of in a forward direction. At this stage, it is expected that the caregiver will typically reconfigure the child seat to function as a cradle by pivoting the upper shell portion downwardly relative to the lower shell portion so that the upper and lower shell portions are aligned in a substantially planar configuration to provide a cradle-style child seat. While the child seat is in this cradle configuration, the child received in the cradle will be laying down so that the child's head extends toward one of the two sides of the swing seat and the child's feet extend toward the other of the two sides of the swing seat so that a left side of the cradle faces in the forward swing direction and a right side of the cradle faces in a rearward swing direction. This provides a comfortable position for a child during swinging of the swing frame with the child seat in the cradle configuration.

Also in preferred embodiments, the base includes a platform supporting the lower shell portion of the child seat and a latch assembly coupled to the platform for movement between a latching position engaging the child seat to retain the child seat on the platform and a releasing position disengaging the child seat to release the child seat from the platform. Illustratively, a pair of such latch assemblies are mounted on the platform and arranged in spaced-apart relation so that one latch assembly is movable relative to the platform to engage a right side of the lower shell portion and another latch assembly is movable relative to the platform to engage a left side of the lower shell portion. Detent mechanisms are provided on the platform to retain each latch assembly in either its latching position or its releasing position at the option of the caregiver. Such a feature helps to hold the child seat in a fixed position on the platform during swinging motion of the child seat in both the chair and cradle configurations of the child seat.

Illustratively, the child seat is constructed so that it can be removed from its mounted position on the platform by manual operation of the latch assemblies. This enables a caregiver to remove the child seat so that it can be used apart from the child swing as a car seat, a car bed, or other infant-carrying or child-seating device.

Additional objects, features, and advantages of the invention will be apparent to those skilled in the art upon consideration of the following detailed description of a preferred embodiment exemplifying the best mode of carrying out the invention as presently perceived.

BRIEF DESCRIPTION OF THE DRAWINGS

The detailed description refers to the accompanying figures in which:

FIG. **1** is a perspective view of a child swing in accordance with the present invention showing a four-legged support stand, a tubular swing frame coupled to the support stand for swinging movement thereon, a rectangular base pivotably mounted to the swinging frame, and a multi-position child seat configured to be mounted and latched in place on the pivotable base and converted to a chair configuration wherein an upper shell portion of the child seat is fixed to lie at an angle to a lower shell portion of the child seat;

FIG. **2** is a plan view of the pivotable base of FIG. **1** with the child seat mounted thereon (and shown in section) showing two pivotable latch assemblies moved in opposite directions to disengage the car seat and lie in their child seat-releasing positions;

FIG. **3** is a view taken along line **3**—**3** of FIG. **2** showing a vertical pivot post mounted on an underlying cross bar included in the swing frame to support the base for pivotable movement relative to the swing frame;

FIG. **4** is a view similar to FIG. **2** showing pivoted movement of each of the latch assemblies to a latching position in which a locking lug on each latch assembly fits into a lug-receiving slot formed on each of the sides of the car seat to retain the child seat in a fixed forward-facing position on the base;

FIG. **5** is a side elevation view of the child seat of FIG. **1** shown in a mounted forward-facing position on the pivotable base and arranged in a chair configuration for swinging movement along a swing arc in forward and rearward swing directions;

FIG. **6** is a view similar to FIG. **5** showing engagement of a back edge of the upper shell portion of the child seat on a transverse cross member provided in the swing frame to block movement of the upper shell portion of the child seat to a cradle configuration lying in substantially planar alignment with the lower shell portion as long as the pivotable base is arranged in its forward-facing position;

FIG. **7** is a view similar to FIG. **2** showing pivoting movement of the pivotable base about the pivot post mounted on the swing frame cross bar provided underneath the base and showing that the center of gravity of the combined child seat and base is offset from the center of rotation of the combined child seat and base established by the pivot post mounted on the cross bar under the base;

FIG. **8** is a view similar to FIGS. **2** and **7** showing the position of the pivotable base relative to the swing frame once the pivotable base has been pivoted through a 90° angle about the pivot post from its forward-facing position shown in FIGS. **2** and **4**–**6** to its side-facing direction;

FIG. **9** is a view showing the child seat in its chair configuration upon arrival of the pivotable base at its side-facing position shown in plain view in FIG. **8**; and

FIG. **10** is a view similar to FIG. **9** showing the child seat in its cradle configuration after a caregiver has elected to pivot the upper shell portion downwardly into alignment with the adjacent lower shell portion so that the upper shell portion extends toward one side of child swing and the lower shell portion extends toward the other side of the child swing.

DETAILED DESCRIPTION OF THE DRAWINGS

A child swing **10** in accordance with the present invention is show in FIG. **1**. The child swing **10** is set up in a ready-to-use position and includes a support stand **12**, a pair of swinging hanger arms **14**, **16**, a swing frame **15** coupled to hanger arms **14**, **16**, a pivotable base **17** mounted on swing frame **15**, child seat **18**, and a crank handle **20**. The support stand **12** includes a swing motor housing **22**, front legs **24**, **25** mounted to the front edge of the swing motor housing **12**, rear legs **26**, **27** mounted to the rear edge of the swing motor housing **12**, and a pair of removable leg braces **28**.

The crank handle **20** can be turned to wind up a spring motor (not shown) mounted in the swing motor housing **22**. Reference is hereby made to U.S. Pat. No. 5,378,196 issued Jan. 3, 1995, to Pinch et al., which patent is incorporated by reference herein, for a description of a swing motor suitable for use in child swing **10**. The swing framed **15**, base **17**, and child seat **18** swing automatically back and forth along a smooth swing arc under the swing motor housing **12** as the spring motor unwinds. A run-time indicator **30** is provided in swing motor housing **12** to make it easy for nearby persons to monitor how long the spring-powered child swing **10** is expected to continue to run before the spring motor fully unwinds and ceases to import pendulum motion to the swing frame **15** through hanger arm **16**.

Each leg brace **28** includes, for example, on one end a snap-on clamp **31** formed to snap onto the rear leg and on the other end a snap-on clamp **32** formed to snap onto the front leg. It will be understood that many kinds of braces could be used to hold the front and rear legs **25**, **25**, **26**, and **27** in the locked, spread position shown in FIG. **1**.

The front side of swing motor housing **12** is also formed to provide a carrying handle **34** adjacent to the run-time indicator **30** to make it easy for a person to grip and carry the child swing **10**. An elongated aperture **36** extends along the back side of carrying handle **34** to receive the fingers of a person gripping the carrying handle **34**. Conveniently, another carrying handle (not shown) and finger-receiving aperture (not shown) are formed along the back side of the swing motor housing **12** to make it easy for a person approaching the child swing **10** from the rear to grip and lift it.

Housing **22** is preferably a clamshell design and includes a top half shell **34** and a complementary bottom half shell **36**. Advantageously, in this clamshell design, the swing motor components (not shown) are fully encased in housing **22** and therefore not easily accessed by a child riding in child swing **10** or standing nearby child swing **10**.

Swing frame **15** includes an elbow-shaped first side arm **38** and an elbow-shaped second side arm **40** arranged to lie in spaced-apart relation as show in FIGS. **1**, **9**, and **10**. First side arm **38** includes an upper portion **42** coupled to left hanger arm **14** as shown in FIG. **1** and a lower portion **44** positioned to lie under pivotable base **17** as shown, for example, in FIG. **2**. Likewise, second side arm **40** includes an upper portion **46** coupled to right hanger arm **16** and a lower portion **48** positioned to lie under pivotable base **17**. Swing frame **15** further includes a bight portion **50** interconnecting distal ends of first and second side arms **38**, **40** as shown in FIGS. **7** and **8**.

A base cross bar **52** interconnects lower portions **44**, **48** of first and second side arms **38**, **40** as shown in FIG. **2** to provide a foundation for pivotable base **17**. As shown in FIGS. **1** and **6**, a rear cross bar **54** interconnects midsections of upper portions **42**, **46**, of first and second side arms **38**, **40** to provide a backstop for blocking conversion of child seat **10** from a chair configuration shown in FIGS. **1** and **5** to a cradle configuration shown in FIG. **10**.

Illustratively, swing frame **15** is made of a single metal tubular member that is bent to provide first and second side

arms **38**, **40** and bight portion **50**. Swing frame **15** also includes two straight metal tubular members that are mounted in place to define base cross member **52** and rear cross member **54**.

Base **17** includes a platform **56** having a central seat-receiving surface **58** and a slightly raised side rim **60** extending around left edge **62**, back edge **64**, and right edge **66** of base **17**. Front edge **68** of base **17** is open as shown in FIG. **1**. Base **17** is also formed to include a first recessed area **69** in left edge **62** for receiving a first latch assembly **70** and a second recessed area **71** in right edge **66** for receiving a second latch assembly **72** as shown in FIG. **2**. Left edge **62** is also formed to include a first fixture-receiving slot **74** interconnecting recessed area **69** and seat-receiving surface **58** and right edge **66** is also formed to include a second fixture-receiving slot **76** interconnecting recessed area **71** and seat-receiving surface **58** as shown, for example, in FIGS. **1**, **2**, and **7**.

Each of the latch assemblies **70** and **72** include an elongated latch arm **78** having a grip handle **80** at one end, a stop member **82** at an opposite end, and a pivot mount **84** positioned therebetween as shown in FIG. **2**. Pivot mount **84** is formed to include an aperture for receiving an upright pivot post **86** that is coupled to base **17**. Each latch assembly **70** and **72** further includes a locking lug **88** arranged to lie at a right angle to grip handle **80** and lie at least partly in one of the fixture-receiving slots **74**, **76**. Essentially, each latching assembly is pivotable about its pivot post **86** from a child seat-releasing position shown in FIG. **2** to a child seat-engaging position shown in FIG. **4**. A detent such as detent **90** is appended to pivotable base **17** to engage and block movement of the latch assembly **70** or **72** away from its child seat-engaging position as shown in FIG. **4**. Rotation of each of the latch assemblies **70**, **72** in an outward direction away from engagement with child seat **18** is limited by engagement of stop member **82** on a portion of side rim **60** as shown, for example, in FIG. **2**.

As shown in FIGS. **2** and **3**, a pivot post **92** is coupled to a midsection of base cross member **52** and arranged to extend upwardly in a vertical direction to engage pivotable base **17** and establish a pivoting joint for base **17** relative to swing frame **15**. As shown in FIG. **3**, pivot post **92** is defined by a sturdy rivet. As shown in FIG. **2**, pivot post **92** is not mounted to engage the center of pivotable base **17** and instead is mounted in a position so as to be offset from the center of mass of the pivotable base **17** and the child seat **18** mounted thereon. Illustratively, the pivotable base **17** is rotatable manually by a caregiver from a forward-facing position wherein front edge **68** is presented to move between front legs **24** and **25** of support stand **12** as shown in FIGS. **1** and **2** to a side-facing position wherein front edge **68** is positioned to face between front leg **25** and rear leg **27** as shown for example in FIGS. **8–10**.

Child seat **18** preferably includes a shell assembly having upper and lower shell portions **94**, **96** pivotably coupled together as shown in FIG. **1**. The upper shell portion **94** can be positioned in either a first angular orientation with respect to lower shell portion **96** as shown in FIGS. **1**, **5**, and **9** or in a second generally planar orientation as shown in FIG. **10**. In the first angular orientation, the child seat **18** is configured to provide a traditional chair configuration. In the second generally planar orientation, child seat **18** provides a cradle configuration. Reference is made to U.S. Pat. No. 4,998,307 to Richard E. Cone, which patent is incorporated by reference herein, for a description of a suitable convertible infant restraint device for use as child seat **18**. One feature of child seat **18** is that it includes a generally rigid shell which has an upper and lower portion that are pivotably coupled so that the shell can be positioned in either a planar configuration or an angled configuration. One advantage of this structure is that child seat **18** can be used in a position mounted on base **17** as a chair as shown in FIGS. **5** and **9** or as a cradle as shown in FIG. **10**. Also, if child seat **18** is removed from its mounted position on base **17** it can be used as a car bed for small infants, a standard rear-facing car seat for older infants, or an infant carrying device. Caregivers will appreciate the versatility and flexibility that convertible child swing offers.

In use, a caregiver can mount child seat **18** on pivotable base **17** in the manner shown in FIGS. **1**, **2**, and **4**. First, latch assemblies **70**, **72** are swung outwardly away from one another to the position shown in FIG. **1** to make base **17** ready for receiving child seat **18**. As shown in FIGS. **1** and **2**, lower shell portion **96** of child seat **18** includes an outwardly protruding mounting fixture **97** formed to include a lug-receiving slot **98**. The bottom of lower shell portion **96** is mounted on seat-receiving portion **58** in base **17** so that a rear lip **110** on lower shell portion **96** engages rear edge **64** of side rim **60** and fits underneath two retention flanges **112** mounted on rear edge **64** as shown in FIGS. **1**, **2**, and **4**. The mounting fixture **97** provided on the left side of lower shell portion **96** fits into the first fixture-receiving slot **74** formed on left edge **62** of side rim **60** as shown in FIG. **2**. Likewise, the mounting fixture **97** provided on the right side of lower shell portion **96** fits into the second fixture-receiving slot **76** formed on the right edge **66** of side rim **60** as also shown in FIG. **2**. Thus, retention flanges **112** and the positioning of mounting fixtures **97** in fixture-receiving slots **74**, **76** formed in base **17** help to locate and position child seat **18** in a predictable predetermined position on base **17**.

Once child seat **18** is properly positioned on underlying base **17**, the caregiver manually rotates latch **70** in direction **114** and latch assembly **72** in direction **116** to cause locking lugs **88** on latch assemblies **70**, **72** to fit into the lug-receiving slots **98** formed in mounting fixtures **97** as shown in FIG. **4**. Such engagement functions to anchor child seat **18** in place on pivotable base **17**. Detents **90** engage latch assemblies **70** and **72** to help hold latch assemblies in their child seat-retaining positions shown in FIG. **4**.

Once child seat **18** is properly installed on pivotable base **17** as shown in FIGS. **4** and **5**, it will typically be arranged to lie in a forward-facing position as shown in FIGS. **4** and **5**. As shown in FIG. **5**, child seat **18** has been positioned by the caregiver to assume its chair configuration. In such a configuration, upper shell portion **94** is arranged to lie at an angle with respect to the lower shell portion **96** mounted on pivotable base **17**. It is not recommended that child seat **18** be arranged to lie in its cradle position when pivotable base **17** occupies its forward-facing position as shown in FIGS. **1**, **2**, **4**, and **5**. Therefore, a rear cross member **54** is positioned as shown in FIGS. **1** and **6** to interconnect upper portions **42**, **46** of first and second side arms **38**, **40**. This rear cross member **54** is placed at a predetermined elevation above pivotable base **17** to block movement of upper shell **94** so that upper shell **94** does not move to a position below the position of upper shell **94** shown in FIG. **6**. This position of rear cross member **54** is selected to minimize breathing difficulties of children seated in child seat **18** during swinging of swing frame **15** along a swing arc in forward and rearward swinging directions.

If a caregiver chooses to convert child swing **10** from a chair-style swing to a cradle-style swing, it is necessary only to pivot base **17** about pivot post **92** from the forward-facing position on swing frame **15** shown in FIG. **2** to the side-

facing position of base **17** shown in FIG. **8**. As such, base **17** is pivoted about pivot post **92** through a 90° angle from the position shown in FIG. **4** to the position shown in FIG. **7** and then to the final position shown in FIG. **8**. As shown in FIGS. **4**, **7**, and **8**, the unit is designed so that the center of mass **118** of the base **17** in combination with child seat **18** is offset from the pivot post **92**. Such an offset enhances the stability of child swing **10** during swinging motion of child seat **18** on base **17**.

Once the caregiver has pivoted base **17** to the side-facing position shown in FIG. **8**, it is expected that the caregiver will convert child seat **18** from the chair configuration shown in FIG. **9** to the cradle configuration shown in FIG. **10**. It will be understood that child seat **18** is able to swing along the swing arc when it occupies the position shown in FIG. **9**.

Illustratively, a first set of detents **120** is mounted to the underside of pivotable base **120** to lock the base to swing frame **15** in the forward-facing position shown in FIGS. **2** and **4**. Also, a second set of detents **122** is mounted at another position on the underside of base **17** to lock base **17** to frame **15** in its side-facing position as shown in FIG. **8**. Illustratively, the first set of detents **120** can be a pair of dimples shown in FIGS. **2** and **3** for engaging and trapping base cross bar **52** therebetween as shown in FIGS. **2** and **3**. Likewise, the second set of detents **122** can be a similar pair of dimples for engaging and trapping base cross bar **52** therebetween as shown in FIG. **8**.

If a consumer decides to take a child for a trip in a vehicle rather than place the child in child swing **10**, it is necessary only to remove child seat **18** from its mounted position on base **17**. This is accomplished by swinging latch assemblies **70** and **72** so that locking lugs **88** disengage the lug-receiving slots **98** formed in lower shell portion **96** of child seat **18**. The consumer can then lift child seat **18** away from base and use it as a car seat, car bed, or other infant carrier or seat.

Although the invention has been described in detail with reference to a preferred embodiment, variations and modifications exist within the scope and spirit of the invention as described and defined in the following claims.

We claim:

1. A child swing comprising

a support stand,

a swing frame mounted on the support stand for reciprocating swinging movement along a swing arc in a forward swing direction and an opposite rearward swing direction,

a base pivotably coupled to the swing frame for angular movement about a pivot axis between a forward-facing position facing in the forward swing direction and a side-facing position facing in a side direction extending at an angle to the forward swing direction, and

a child seat coupled to the base to pivot therewith relative to the swing frame.

2. The child swing of claim **1**, wherein the support stand includes a swing motor housing, first and second forward legs coupled to the swing motor housing and arranged to extend downwardly from the swing motor housing in the forward swing direction and lie in spaced-apart relation to define a forward-facing opening therebetween and first and second rearward legs coupled to the swing motor housing and arranged to extend downwardly from the swing motor housing in the rearward swing direction and lie in spaced-apart relation to define a rearward facing opening therebetween, the first forward leg lies in spaced-apart relation to the first rearward leg to define a first A-shaped side-facing opening therebetween on one side of the support stand, the second forward leg lies in spaced-apart relation to the second rearward leg to define a second A-shaped side facing opening therebetween on an opposite side of the support stand, the child seat includes a headrest portion and a footrest portion, and the child seat is mounted in a fixed position on the base to cause the headrest portion to lie adjacent to the rearward-facing opening and footrest portion to lie adjacent to the forward-facing opening upon pivoting movement of the base on the swing frame to its forward-facing position and to cause the headrest portion to lie adjacent to the first A-shaped side-facing opening and footrest portion to lie adjacent to the second A-shaped side-facing opening upon pivoting movement of the base on the swing frame to its side-facing position.

3. The child swing of claim **2**, wherein the angle between the forward swing direction and the side direction is 90°.

4. The child swing of claim **2**, wherein the swing frame includes a first swing arm having an upper portion coupled to the swing motor housing and a lower portion positioned underneath the base, and a cross bar lying underneath the base and interconnecting the lower portions of the first and second swing arms, a pivot post is mounted on the cross bar, and the base is mounted on the pivot post for pivotable movement between the forward-facing and side-facing positions.

5. The child swing of claim **4**, wherein the base includes a first detent positioned to engage the cross bar and releasably lock the base to the swing frame for swinging movement therewith upon pivoting movement of the base to the forward-facing position and a second detent positioned to engage the cross bar and releasably lock the base to the swing frame for swinging movement therewith upon pivoting movement of the base to the side-facing position.

6. The child swing of claim **2**, wherein the child seat includes a generally rigid shell assembly for receiving a child, the shell assembly includes a lower shell portion and an upper shell portion pivotably coupled to the lower shell portion to permit the shell assembly to be alternately positioned in one of a substantially planar configuration and an angled configuration, and the lower shell portion is releasably coupled to the base to permit movement of the upper shell portion relative to the base.

7. The child swing of claim **6**, wherein the swing frame includes a first swing arm having an upper portion coupled to the swing motor housing and a lower portion positioned underneath the base, a second swing arm having an upper portion coupled to the swing motor housing and a lower portion positioned underneath the base, and a cross bar interconnecting the upper portions of the first and second swing arms and engaging the upper shell during movement of the upper shell portion relative to the lower shell portion to block movement of the shell assembly to the substantially planar configuration when the base lies in its forward-facing position.

8. The child swing of claim **7**, wherein the swing frame further includes a base cross bar lying underneath the base and interconnecting the lower portions of the first and second swing arms, a pivot post is mounted on the base cross bar, and the base is mounted on the pivot post for pivotable movement between the forward-facing and the side-facing positions.

9. The child swing of claim **7**, wherein the base includes a top side facing toward the swing motor housing, the lower shell portion of the shell assembly is releasably coupled to the top side of the base, and the upper shell portion is

movable relative to the lower shell portion to engage the top side of the base upon pivoting movement of the base to the side-facing position so that the shell assembly is movable to assume the substantially planar configuration on the base during swinging movement of the base in the side-facing position with the swing frame along the swing arc.

10. The child swing of claim **1**, wherein the base includes a platform supporting the child seat and a latch assembly coupled to the platform for movement between a latching position engaging the child seat to retain the child seat on the platform and a releasing position disengaging the child seat to release the child seat form the platform.

11. The child swing of claim **10**, wherein the platform includes a detent positioned to engage the latch assembly and releasably lock the latch assembly in its latching position during swinging movement of the base with the swing frame.

12. The child swing of claim **10**, wherein the latch assembly includes a pivot post appended to the platform and a latch arm having a grip handle and a locking lug, the child seat is formed to include a lug-receiving slot, and the latch arm is mounted on the pivot post appended to the platform for pivotable movement so that the locking lug engages the lug-receiving slot upon movement of the latch assembly to the latching position and disengages the lug-receiving slot upon movement of the latching assembly to the releasing position.

13. The child swing of claim **12**, wherein the platform includes a seat-receiving surface and a side rim adjacent to the seat-receiving surface, the side rim is formed to include a fixture-receiving slot, the child seat includes a base engaging the seat-receiving surface and a mounting fixture appended to the base and positioned to extend into the fixture-receiving slot upon engagement of the base of the child seat and the seat-receiving surface on the platform to align the child seat in a predetermined position on the platform.

14. The child swing of claim **13**, wherein the mounting fixture is formed to include the lug-receiving slot and the locking lug is arranged to pass through the fixture-receiving slot formed in the side rim and engage the lug-receiving slot formed in the mounting fixture upon movement of the latch assembly to the latching position.

15. The child swing of claim **10**, wherein the child seat includes a generally rigid shell assembly for receiving a child, the shell assembly includes a lower shell portion and an upper shell portion pivotably coupled to the lower shell portion to permit the shell assembly to be alternately positioned in one of a substantially planar configuration and an angled configuration, the latch assembly includes a locking lug, and the lower portion is formed to include a lug-receiving slot positioned to receive the locking lug therein upon movement of the latch assembly to its latching position to retain the lower shell portion in a fixed position on the platform and allow pivoting movement of the upper portion relative to the lower shell portion and the platform.

16. The child swing of claim **15**, wherein the latch assembly further includes a pivot post appended to the platform and a latch arm carrying the locking lug and the latch arm is mounted on the pivot post appended to the platform for pivotable movement so that the locking lug engages the lug-receiving slot formed in the lower shell portion upon movement of the latch assembly to the latching position.

17. The child swing of claim **16**, wherein the swing frame includes a first swing arm having an upper portion coupled to the swing motor housing and a lower portion positioned underneath the base, a second swing arm having an upper portion coupled to the swing motor housing and a lower portion positioned underneath the base, and a cross bar interconnecting the upper portions of the first and second swing arms and engaging the upper shell during movement of the upper shell portion relative to the lower shell portion to block movement of the shell assembly to the substantially planar configuration when the base lies in its forward-facing position.

18. The child swing of claim **17**, wherein the swing frame further includes a base cross bar lying underneath the base and interconnecting the lower portions of the first and second swing arms, a pivot post is mounted on the base cross bar, and the base is mounted on the pivot post for pivotable movement between the forward-facing and the side-facing positions.

19. The child swing of claim **17**, wherein the base includes a top side facing toward the swing motor housing, the lower shell portion of the shell assembly is releasably coupled to the top side of the base, and the upper shell portion is movable relative to the lower shell portion to engage the top side of the base upon pivoting movement of the base to the side-facing position so that the shell assembly is movable to assume the substantially planar configuration on the base during swinging movement of the base in the side-facing position with the swing frame along the swing arc.

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